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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/821,521	04/09/2004	An Duc Nguyen	11336/519	9854
53724 7590 03/05/2008 PAULEY PETERSEN & ERICKSON 2800 W. HIGGINS ROAD SUITE 365 HOFFMAN ESTATES, IL 60195			EXAMINER NI, SUHAN	
			ART UNIT 2614	PAPER NUMBER
			MAIL DATE 03/05/2008	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/821,521	Applicant(s) NGUYEN ET AL.	
	Examiner Suhan Ni	Art Unit 2614	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 December 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6, 9, 10, 12-38, 40-43, 66, 67 and 69-71 is/are pending in the application.
- 4a) Of the above claim(s) 69-71 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 3-6, 9, 12-20, 24-38, 40-43, 66 and 67 is/are rejected.
- 7) ☒ Claim(s) 2, 10 and 21-23 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>10/25/04; 4/25/05; 12/2/05</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The Art Unit location of your application in the PTO has changed. To aid in correlating any papers for this application, all further correspondence regarding this application should be directed to Group **Art Unit 2614**.

Response to Election/Restriction

2. This communication is responsive to the provisional election made with traverse on 12/06/2007, the applicants' remarks to the election/restriction requirement are persuasive and, therefore, the election/restriction requirement mailed 10/30/2007 is withdrawn.

3. This communication is responsive to the amendment filed 08/06/2007.

4. Newly submitted claims 69-71 directed to an invention that is independent or distinct from the invention **originally claimed** for the following reason:

Claims 69-71 are drawn to the structures/structural elements of an acoustic transducer comprising a diaphragm and a frame comprising a **non-ferromagnetic material** and a magnet with a **ferromagnetic U-shaped yoke structure**.

5. Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 69-71 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Drawings

6. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the claimed limitations of "**the voice**

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coil is mounted on a side surface" in claim 18, and **"an electromagnet"** in claim 33 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

7. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

8. Claims 1-6, 9-10, 12-38, 40-43 and 66-67 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 3-12 and 17-32 of U.S. Patent Application No. 10/821,520. Although the conflicting claims are not identical, they are not patentably distinct from each other because claims 1, 3-12 and 17-32 of U.S. Patent Application No. 10/821,520 are similar in scope to 1-6, 9-10, 12-38, 40-43 and 66-67 of the U.S. Patent Application 10/821,521 with obvious wording variations.

9. Claims 1-6, 9-10, 12-38, 40-43 and 66-67 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-20 of U.S. Patent 07/333,620. Although the conflicting claims are not identical, they are not patentably distinct from each other because claims 1-20 of U.S. Patent 07/333,620 are similar in scope to claim 1-6, 9-10, 12-38, 40-43 and 66-67 of the U.S. Patent Application 10/821,521 with obvious wording variations.

Claim Rejections - 35 USC § 112, 2nd Paragraph

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

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10. Claims 18, 20 and 33 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 18, the claimed limitation of “the voice coil is mounted on a side surface” is indefinite since it is not clear what does it refer to.

Regarding claim 20, it recites the limitation “the fin” in line 2. There is insufficient antecedent basis for this limitation in the claim.

Regarding claim 33, the recited limitation of “an electromagnet” in line 2 is indefinite, since it is not clear how does it be structured and connected to the frame of the transducer.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) The invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) The invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

11. Claims 1, 3-4, 9, 12-13, 15, 26-29, 31-32 and 35-37 are rejected under 35 U.S.C. 102(e) as being anticipated by Kam (U. S. Pat. App. Pub. – 2004/0037447).

Regarding claim 1, Kam disclose an acoustic transducer comprising: a frame (183) comprising a ferromagnetic material and providing a closed return path for a magnetic field generated by a magnetic structure (182); a diaphragm (10) having a substantially planar projection surface, where the diaphragm is operatively attached to the frame (Fig. 2); the magnet structure (182) mounted on the frame, where the magnet structure produces a magnetic-field

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region; and an electrically conductive voice coil (172) coupled to the diaphragm and extending out of a plane of the projection surface; where the voice coil resides at least partially in the magnetic-field region as claimed.

Regarding claim 3, Kam further disclose the acoustic transducer, where the magnetic-field region is substantially uniform (Fig. 2) throughout an excursion region of the voice coil.

Regarding claim 4, Kam further disclose the acoustic transducer, where the voice coil has a substantially flat structure in the magnetic-field region, and where a plane of the voice coil in the magnetic-field region is substantially perpendicular to a magnetic field in the magnetic-field region (Fig. 2).

Regarding claims 9 and 12, Kam further disclose the acoustic transducer, where the magnet structure comprises a magnet (182) and a portion of the frame (183).

Regarding claims 13, 15 and 35-37, Kam further disclose the acoustic transducer, where the flame (Fig. 2) has a substantially crenellated shape and the projection surface of the diaphragm is in the shape of a rectangle (Fig. 1a).

Regarding claims 26-27, Kam further disclose the acoustic transducer, where the projection surface of the diaphragm is operatively attached to the frame (Fig. 2) as claimed.

Regarding claims 28-29, Kam further discloses the acoustic transducer, comprising a side surface (12) connected at an angle (Fig. 2) to the projection surface, where the side surface is operatively attached to the frame as claimed.

Regarding claims 31-32, Kam further discloses the acoustic transducer, where the magnet structure comprises a permanent magnet and a ferromagnetic yoke structure (Fig. 2) as claimed.

12. Claims 1, 5-6, 16-20, 30, 41-43 and 66-67 are rejected under 35 U.S.C. 102(b) as being anticipated by Sawafuji (U. S. Pat. - 4,544,805).

Regarding claim 1, Sawafuji discloses an acoustic transducer comprising: a frame (1) comprising a ferromagnetic material and providing a closed return path for a magnetic field generated by a magnetic structure; a diaphragm (23) having a substantially planar projection surface, where the diaphragm is operatively attached to the frame (Fig. 7); a magnet structure (6) mounted on the frame, where the magnet structure produces a magnetic-field region; and an electrically conductive voice coil (29) coupled to the diaphragm and extending out of a plane of the projection surface; where the voice coil resides at least partially in the magnetic-field region as claimed.

Regarding claims 5-6, Sawafuji further discloses the acoustic transducer, comprising: a fin (25) having a first edge and an opposing second edge, where the first edge of the fin is attached to the projection surface, the fin extends in a direction away from the projection surface and into the magnetic-field region, and the voice coil is mounted on the fin as claimed (Figs. 6 and 10).

Regarding claim 16, Sawafuji further discloses the acoustic transducer, comprising at least three voice coils and further comprising three fins, where one of the voice coils is mounted on each of the fins (Fig. 7) as claimed.

Regarding claims 17-19, Sawafuji further disclose the acoustic transducer, further comprising side surfaces at two or more perimeter edges of the projection surface, where the side surfaces extend out of a plane of the projection surface (Fig. 7) as claimed.

Regarding claim 20, Sawafuji further disclose the acoustic transducer, where the projection surface and the fin are formed from a single sheet of material (Fig. 10).

Regarding claim 30, Sawafuji further disclose the acoustic transducer, where the magnet structure comprises at least two stationary magnets (6) having two magnetic-field regions as claimed.

Regarding claims 41-43, Sawafuji further disclose the acoustic transducer, where the voice coil comprises a substantially flat ribbon of metal and a conductive metal is formed on a fin of the diaphragm to form the voice coil (Figs. 5 and 10) as claimed.

Method claims 66-67 are similar to claims 1, 5-6, 16-20, 30 and 41-43 except for being couched in method terminology; such methods would be inherent when the structure is shown in the references.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claims 14, 24-25, 33-34, 38 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kam (U. S. Pat. App. Pub. – 2004/0037447)

Regarding claims 14 and 38, Kam may not clearly teach a groove as claimed. Since providing suitable mounting features on a frame of a transducer is very well known in the art, it therefore would have been obvious to one having ordinary skill in the art at the time the invention was made to be motivated to provide suitable mounting features, such as a groove on the frame of the transducer as an alternate choice, in order to efficiently and effectively mount a magnet (182) or suspension means on the frame of the transducer.

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Regarding claims 24-25, Kam may not clearly teach for the details of the diaphragm as claimed. Since providing suitable multi-layer flat diaphragm for a transducer is very well known in the art, it therefore would have been obvious to one having ordinary skill in the art at the time the invention was made to be motivated to provide suitable multi-layer flat diaphragm, such as a honeycomb type three layers diaphragm for the transducer as an alternate choice, in order to efficiently and effectively manufacture the transducer.

Regarding claim 33, Kam does not clearly teach an electromagnet as claimed. Since providing suitable an electromagnet for a transducer is very well known in the art, it therefore would have been obvious to one having ordinary skill in the art at the time the invention was made to be motivated to provide suitable electromagnet for the transducer as an alternate choice, in order to provide transducer with desirable acoustic characteristics, such as noise reduction.

Regarding claim 34, Kam does not clearly teach for the details of the material of the magnet as claimed. Since providing suitable magnetic material for magnet of a transducer is very well known in the art, it therefore would have been obvious to one having ordinary skill in the art at the time the invention was made to be motivated to provide suitable material, such as ferrite for the magnet of the transducer, in order to effectively and efficiently manufacture the transducer.

Regarding claim 40, Kam does not clearly teach for the details of the material of the voice coil as claimed. Since providing suitable conductive material for the voice coil of a transducer is very well known in the art, it therefore would have been obvious to one having ordinary skill in the art at the time the invention was made to be motivated to provide suitable material, such as copper for the material of the voice coil of the transducer, in order to effectively and efficiently manufacture the transducer.

Allowable Subject Matter

14. Claims 2, 10 and 21-23 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Amendment

15. Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Suhan Ni** whose telephone number is **(571)-272-7505**, and the number for fax machine is **(571)-273-7505**. The examiner can normally be reached on Tuesday and Thursday from 10:00 am to 8:00 pm, and may be reached on Monday, Wednesday and Friday from 10:00 am to 8:00 pm. If it is necessary, the examiner's supervisor, **Sinh N. Tran**, can be reached at **(571)-272-7564**.

18. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (**PAIR**) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov/>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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19. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the group receptionist whose telephone number is (571)-272-2600, or please see <http://www.uspto.gov/web/info/2600>.

02/26/2008

A handwritten signature in black ink, appearing to read 'Suhan Ni', with a stylized flourish at the end.

SUHAN NI
PRIMARY EXAMINER